

CLAIMS

- 1) A device for measuring at least the pressure of a fluid present in a chamber (16), said device comprising a sensitive element (36) placed in a housing (38) borne by a seal (10) interposed between two elements (12, 14) forming said chamber, characterized in that housing (38) is open in the direction of chamber (16) and sensitive element (36) is coated with a material (67) filling said housing.
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- 2) A measuring device as claimed in claim 1, characterized in that seal (10) comprises a pile of two extreme sheets (32, 34) between which a multiplicity of intermediate sheets (42, 48, 50, 52, 54) is arranged and housing (38) is delimited by said 10 extreme sheets and at least one intermediate sheet.
- 3) A measuring device as claimed in claim 2, characterized in that at least one intermediate sheet comprises a cut (40) open in the direction of chamber (16).
- 4) A measuring device as claimed in claim 2 or 3, characterized in that at least one intermediate sheet (48, 54) comprises electric connection means (58, 59, 60) between 15 sensitive element (36) and a measuring means.
- 5) A measuring device as claimed in claim 4, characterized in that electric connection means (58, 59, 60) are borne by an intermediate sheet in form of a film (48, 54) on which a printed circuit comprising at least one electric conductor (60, 63) between sensitive element (36) and the measuring means is formed.

6) A measuring means as claimed in any one of claims 2 to 5, characterized in that the sheets are electrically insulated from one another by at least one sheet in form of a plate, layer or insulating deposit (50, 52).

7) A measuring device as claimed in any one of claims 4 or 5, characterized in that
5 two of the opposite vertical faces of sensitive element (36) are connected to the electric connection means.

8) A measuring device as claimed in any one of claims 4 or 5, characterized in that two of the opposite horizontal faces of sensitive element (36) are connected to the electric connection means.

10 9) A measuring device as claimed in any one of claims 4 to 8, characterized in that sensitive element (36) is connected to the electric connection means by a conducting glue (64).

10) A measuring device as claimed in any one of claims 4 to 9, characterized in that sensitive element (36) is connected to the electric connection means by at least one
15 conducting element (66).

11) A measuring device as claimed in any one of claims 2 to 6, characterized in that the sheets are joined together by glueing.

12) A measuring device as claimed in claim 11, characterized in that glueing is carried out by interposing a glue layer (56).

20 13) A measuring device as claimed in claim 2, characterized in that at least extreme sheets (32, 34) are made of metal.

14) A measuring device as claimed in claim 2 to 6, characterized in that at least central sheet (42) of the intermediate sheets is made of metal.

15) A measuring device as claimed in claim 1, characterized in that the material (67) filling housing (38) is a resin withstanding high temperatures.

5 16) A measuring device as claimed in any one of claims 1 to 3, characterized in that face (57) of the housing in the direction of the chamber is covered with a protective element (68).

17) A measuring device as claimed in claim 16, characterized in that protective element (68) comprises a wall covering face (57) and the ends of said wall are folded 10 back over extreme sheets (32, 34) of the seal.

18) A measuring device as claimed in claim 1, characterized in that sensitive element (36) is of piezoelectric or piezoresistive type.

19) A measuring device as claimed in any one of the previous claims, characterized in that seal (10) is a cylinder head gasket arranged between cylinder head (12) and 15 engine block (14) of an internal-combustion engine.

20 20) A measuring device as claimed in claim 1, characterized in that the seal comprises a temperature-sensitive element.

21) Application of at least one measuring device as claimed in any one of claims 1 to 19 to engine knock measurement, detection and analysis in the combustion chamber 20 of an internal-combustion engine.

22) Application of at least one measuring device as claimed in any one of claims 1 to 19 to combustion characterization in at least one combustion chamber of an internal-combustion engine.

23) Application of at least one measuring device as claimed in any one of claims 1 to 19 to engine knock location in the combustion chamber of an internal-combustion engine.